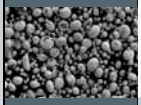
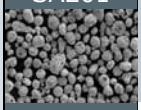
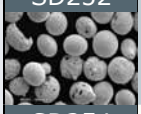
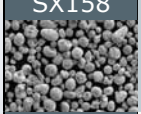
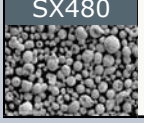
# Thermal Spray Powders

## POWDER PERFECT™

| TUNGSTEN CARBIDE PRODUCTS | | | | | | |
|---|---|---|---|---|---|---|
| **GTP Type/ SEM Photo** | **Composition, Carbon, Apparent Density** | **Description** | **Size Range (µm) *** | **Specification** | **Typical Properties and Applications** | **Industry / Applications** |
| SX427  | 93% WC - 7% Co<br>5.4% - 6.0%<br>2.5 - 3.5 g/cc | Sintered Agglomerate | -54/+10 | | For abrasion, erosion, and sliding wear resistance, operational temperature range below 500°C | Petrochemical<br>Aerospace<br>Plastic |
| SA201  | 88% WC - 12% Co<br>5.15% Min<br>4.6 - 5.4 g/cc | Densified Spherical | -54/+10<br>-44/+10<br>-106/+44 | GE B50TF27 Class A<br>GE B50TF27 Class B | Aerospace qualified material for abrasion and particle erosion, operating temperature range below 500°C | Thread Guides<br>Screw Conveyors<br>Jet Engine Components<br>Pump Parts |
| SD251  | 88% WC - 12% Co<br>3.9% - 4.3%<br>6.0 - 7.0 g/cc | Densified Spherical | -44/+10 | PWA 1379<br>AMS 7879 | Aerospace qualified material for abrasion and particle erosion, operating temperature range below 500°C | Thread Guides<br>Screw Conveyors<br>Jet Engine Components<br>Pump Parts |
| SD252  | 88% WC - 12% Co<br>3.6% - 4.2%<br>6.0 - 6.4 g/cc | Densified Spherical | -106/+44 | PWA 1302 | Aerospace qualified material for abrasion and particle erosion, operating temperature range below 500°C | Thread Guides<br>Screw Conveyors<br>Jet Engine Components<br>Pump Parts |
| SD254  | 88% WC - 12% Co<br>3.8% - 4.5%<br>55 - 65 g/in$^3$ | Densified Irregular | -25/+5 | | Very fine as-sprayed surface roughness and sliding wear resistant, Operating temperature range below 500°C | Wear parts for paper processing |
| SX408  | 88% WC - 12% Co<br>5.15% Min<br>2.5 - 4.0 g/cc | Sintered Agglomerate | -54/+10<br>-44/+10 | | Excellent deposit efficiency, and high hardness (Vickers 1200), for abrasion & particle erosion, operating temp. range below 500°C. | Thread Guides<br>Screw Conveyors<br>Jet Engine Components<br>Pump Parts |
| SX112  | 83% WC - 17% Co<br>4.8% - 5.6%<br>3.1 - 3.5 g/cc | Sintered Agglomerate | -54/+10<br>-44/+10 | RR 9507-1<br>GE 50TF167 Class A | Aerospace qualified material for fretting, impact and abrasion resistant, operating temperature range below 500°C | Turbine Engines<br>Compressor Shafts |
| SX158  | 83% WC - 17% Co<br>4.8% - 5.6%<br>4.7 - 5.5 g/cc | Densified Spherical | -54/+10 | RR 9507-1<br>GE 50TF167 Class A<br>GE 50TF167 Class C | Aerospace qualified material for fretting, impact and abrasion resistant, operating temperature range below 500°C | Turbine Engines<br>Compressor Shafts |
| SX178  | 86% WC 10% Co<br>4% Cr<br>4.7% - 5.7%<br>5.2 - 6.2 g/cc | Densified Spherical | -54/+10<br>-44/+10 | | Abrasion, erosion, and corrosion resistant, operating temperature range below 500°C | Oil Field Gate Valves<br>Paper Rolls<br>Hard Chrome Replacement<br>Petrochemical |
| SX477  | 90%WC<br>10%Ni | Sintered Agglomerate | -44/+10 | | Abrasive, erosion and corrosion resistant, operating temperature range below 500°C | Plungers and pump housings,<br>Exhaust fans, plug gauges,<br>Sucker rod couplings<br>Hard chrome replacement |
| SX480  | 90%WC<br>10%Ni | Densified Spherical | -54/+15 | | Abrasive, erosion and corrosion resistant, operating temperature range below 500°C | Plungers and pump housings,<br>Exhaust fans, plug gauges,<br>Sucker rod couplings<br>Hard chrome replacement |

* Customization available upon request.

Global Tungsten & Powders Corp.
1 Hawes Street
Towanda, PA 18848 / USA

Phone: (570) 268-5000
Fax: (570) 268-5323
e-mail: info@globaltungsten.com

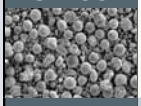
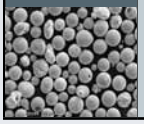
# Thermal Spray Powders

## POWDER PERFECT™

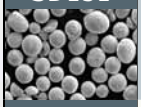
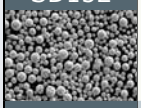
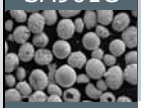
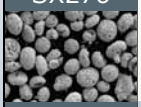
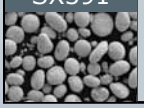
GTP products are used worldwide by spray shops and original equipment manufacturers (OEMs) in industries ranging from aerospace and automotive to oil exploration and paper processing. GTP is a vertically integrated facility from raw material to final product. This provides us with the ability to maintain a tight control of our manufacturing process and produce a quality product.

GTP branded products are identified by a GTP type number and arranged in sections according to their general chemical composition. Technical Information Bulletins (TIBs) that provide more comprehensive information on individual products are available upon request.

### CHROME CARBIDE PRODUCTS

| GTP Type/ SEM Photo | Composition, Carbon, Bulk Density | Description | Size Range (µm) * | Specification | Typical Properties and Applications | Industy / Applications |
|---|---|---|---|---|---|---|
| SX195  | 75% $Cr_3C_2$<br>25% Ni/Cr<br>9.0% - 10.1%<br>2.6 - 3.8 g/cc | Densified Spherical | -54/+10<br>-44/+10 | GE B50TF263-S2 | High temperature abrasive, fretting, erosion, impact and sliding wear resistant. Aerospace qualified material. Operating temperature range below 750°C | Power generation/components<br>Petrochemical/oil drilling<br>Hard chrome replacement<br>Cumbustors, Automotive valves |
| SX199  | WC-$Cr_3C_2$-Ni/Cr<br>5.5% - 6.5%<br>4.7 - 5.6 g/cc | Densified Spherical | -54/+10 | | Abrasive, fretting, erosion and corrosion resistant.<br>Operating temperature range below 500°C | Paper and Steel mill rolls<br>Seal & bearings for fluid pumps<br>Cutters for food processing<br>Hard chrome replacement<br>Paper, Plastic, Petrochemical |

### MOLYBDENUM PRODUCTS

| GTP Type/ SEM Photo | Composition, Carbon, Bulk Density | Description | Size Range (µm) * | Specification | Typical Properties and Applications | Industy / Applications |
|---|---|---|---|---|---|---|
| SA101  | 99.5% Mo<br>NA<br>2.0 - 2.7 g/cc | Sintered Agglomerate | -90/+44<br>-44/+10 | PWA 1313 | Excellent sliding, lubricating and low friction metal contact material. | Automotive<br>Plastic<br>Blend Component |
| SD151  | 99.5% Mo<br>NA<br>5.0 g/cc min | Densified Spherical | -90/+44 | PWA 1313 | Excellent sliding, lubricating and low friction metal contact material. Aerospace qualified material | Automotive<br>Plastic<br>Turbine Engines |
| SD152  | 99.5% Mo<br>NA<br>5.0 g/cc min | Densified Spherical | -44/+10 | | Excellent sliding, lubricating and low friction metal contact material. | Aerospace<br>Automotive<br>Plastic<br>Turbine Engines |
| SA901C  | SA101 + Carbon + Nickel Alloy Blend<br>2.0% - 3.0%<br>2.0 - 4.3 g/cc | Sintered Agglomerate | -90/+44 | | Excellent sliding, lubricating and low friction metal contact material. Nickel alloy blend add abrasive resistance. | Automotive<br>Piston Rings |
| SX276  | Mo - Mo2C<br>1.8% - 2.4%<br>2.0 - 4.3 g/cc | Sintered Agglomerate | -90/+44 | | Excellent sliding, lubricating and low friction metal contact material. Excellent sliding wear properties. | Automotive<br>Plastic Processing<br>Sychronizer Rings<br>Steel-mill machinery |
| SX391  | Mo2C<br>5.8% - 6.1%<br>43 - 53 g/in³ (Scott Density) | Sintered Agglomerate | -90/+44 | | Excellent sliding, lubricating and low friction metal contact material. Excellent sliding wear properties. | Automotive<br>Blend Component |

* Customization available upon request.

Global Tungsten & Powders Corp.
1 Hawes Street
Towanda, PA 18848 / USA

Phone: (570) 268-5000
Fax: (570) 268-5323
e-mail: info@globaltungsten.com

# Thermal Spray Powders

## Cross Reference Guide

| GTP Type | Composition | HC Starck Amperit® | Praxair | Sulzer Metco | Woka | Stellite / Deloro |
|---|---|---|---|---|---|---|
| SX195 | 75% Cr3C2<br>25% Ni/Cr | 584 | CRC-300<br>1375VM | Amdry 5260 | 7202 | JK 135 |
| SX427 | 93% WC<br>7% Co | | | | | |
| SA201 | 88% WC<br>12% Co | 516 | WC-489-1<br>WC-114 | Sulzer Metco 5810<br>Diamalloy 2004<br>Metco 72F –NS | 3101, 3102, 3103 | JK 114 |
| SD251 | 88% WC<br>12% Co | 515 | WC-726 | Amdry 301<br>Metco 71VF-NS-5<br>Diamalloy 2003 | 3101 | JK 112 |
| SD252 | 88% WC<br>12% Co | 515 | WC-726 | Amdry 302<br>Metco 71NS | 3101 | JK 112 |
| SD254 | 88% WC<br>12% Co | 515 | WC-114 | | | JK 112 |
| SX408 | 88% WC<br>12% Co | 518 | WC-727-1 | Sulzer Metco 5812 | 3201 | |
| SX112 | 83% WC<br>17% Co | 526 | WC-128-2 | 2005NS / 2006<br>73F/SF, 5826 | | JK 119 |
| SX158 | 83% WC<br>17% Co | 526 | WC-559<br>WC-729 | Amdry 9830/9831<br>73F-NS-1 | | JK 117 |
| SX178 | 86% WC<br>10% Co / 4% Cr | 553<br>554 | WC-731<br>1350VM | Amdry 5843<br>Sulzer Metco 5847 | 3651<br>3652 | JK 120<br>JK 7109 |
| SX199 | WC - $Cr_3C_2$ - Ni/Cr | 552 | WC-496 | | | JK 125 |
| SX477 | 90% WC<br>10% Ni | | WC-724 | | 3301, 3302, 3303 | JK 6189 |
| SX480 | 90% WC<br>10% Ni | | WC-724 | | 3301, 3302, 3303 | JK 6189 |
| SA101 | 99.5% Mo | 105 | MO-103 | | | |
| SD151 | 99.5% Mo | 109 | MO-102 | 63NS<br>Amdry 313X | | |
| SD152 | 99.5% Mo | 109 | MO-102 | 63NS<br>Amdry 313X | | |
| SA901C | SA101 + Carbon Nickel Alloy Blend | | AI-1054 | | | |
| SX276 | Mo - $Mo_2C$ | 110 | | | | |
| SX391 | $Mo_2C$ | 599 | | Metco 64 | | |

Global Tungsten & Powders Corp.
1 Hawes Street
Towanda, PA 18848 / USA

Phone: (570) 268-5000
Fax: (570) 268-5323
e-mail: info@globaltungsten.com